

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2003/001395

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int. Cl. <sup>7</sup> : H01L 39/16, H02H 9/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI: IPC H01L 39/16, H02H 3/16, 7/16, 9/16, H01C 7/16, H01F 6/16, 36/16 & keywords: SUPERCONDUCTOR, HTS FAULT, CURRENT LIMITER, MAGNETIC CORE, COIL, AC, DC, PHASE and similar terms		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 19851047 A (JOO YONG SEOK ET AL) 10 Jun 1999 See whole document, especially Fig.8 and column 7 line 60 - column 8 line 16	1-6, 9, 10
Y	GB 2321137 A (GEC ALSTHOM LIMITED) 15 July 1998 See whole document, especially Fig.1	1-6, 9, 10
Y	EP 984462 A (OXFORD INSTRUMENTS (UK) LIMITED) 8 March 2000 See whole document, especially Fig.1	1-6, 9, 10
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
Date of the actual completion of the international search 20 November 2003		Date of mailing of the international search report 15 JAN 2004
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer  BAYER MITROVIC Telephone No : (02) 6283 2164

**Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos :  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos :  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

**Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

See additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-6, 9 and 10

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

**Supplemental Box**

(To be used when the space in any of Boxes I to VIII is not sufficient)

**Continuation of Box No: II**

Following groups of invention were found:

1. Claims 1-6, 9, 10 - Superconducting current limiting device having high magnetic permeability structure, central core, superconductive coil surrounding central core and first and second alternating current coils magnetically coupled to central core.
2. Claims 7, 8 and 11 - Multistage superconducting current limiter comprising first and second current limiter to limit first and second portion of a transient fault.
3. Claim 12 - Multiphase superconducting current limiter requiring only one cryostat, one cryocooler and one superconducting coil.
4. Claims 13 and 14 - A DC saturated superconducting current limiter including an air gap in the iron core.

These groups are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is generic superconductive current limiting device. However this concept is not novel in the light of above cited documents.

Information on patent family members

International application No.

PCT/AU2003/001395

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
DE	19851047	NONE			
GB	2321137	NONE			
EP	0984462	JP	2000102161	US	6300856
				US	2002017974
END OF ANNEX					